

## UTILITIES DIVISION[199]

### Notice of Intended Action

**Twenty-five interested persons, a governmental subdivision, an agency or association of 25 or more persons may demand an oral presentation hereon as provided in Iowa Code section 17A.4(1)“b.”**

**Notice is also given to the public that the Administrative Rules Review Committee may, on its own motion or on written request by any individual or group, review this proposed action under section 17A.8(6) at a regular or special meeting where the public or interested persons may be heard.**

Pursuant to Iowa Code sections 17A.4, 364.23, 476.1, 476.1A, 476.1B, and 476.62, the Utilities Board (Board) gives notice that on June 22, 2010, the Board issued an order in Docket No. RMU-2010-0002, In re: Exterior Flood Lighting, “Order Commencing Rule Making.” The Board is noticing for public comment proposed amendments to 199 IAC 35.15(3) and 36.8(3). The proposed amendments reflect advances in technology that make other forms of outdoor lighting, particularly light-emitting diode (LED) or solid-state lighting, as efficient as some types of high-pressure sodium lighting, which has been used as the standard for energy-efficient exterior flood lighting.

Iowa Code section 476.62, which was enacted in 1989, provides that “[a]ll public utility-owned exterior flood lighting, including but not limited to street and security lighting, shall be replaced . . . with high pressure sodium lighting or lighting with equivalent or better energy efficiency as approved in rules adopted by the board.” In addition, Iowa Code section 364.23 provides that

[a]ll city-owned exterior flood lighting, including but not limited to street and security lighting but not including era or period lighting which has a minimum efficiency rating of fifty-eight lumens per watt and not including stadium or ball park lighting, shall be replaced, when worn-out, exclusively with high pressure sodium lighting or lighting with equivalent or better energy efficiency as approved in rules adopted by the utilities board . . . .

The Board subsequently adopted rules (199 IAC 35.15(476) and 36.8(476)) to implement the statutes and in the rules used a schedule of lumens per watt to determine efficiency. While the rules worked well when high-pressure sodium lighting set the efficiency standard, new technology has evolved where some other forms of outdoor lighting are as efficient as or more efficient than high-pressure sodium and may produce a light quality that works better in certain areas. The advancement of new technology in outdoor lighting was highlighted by the recent approval of 15 Iowa cities for American Recovery and Reinvestment Act of 2009 funding for energy-efficient projects, which include outdoor LED lighting.

LED lighting has certain benefits other than efficiency, including less maintenance and improved light quality. In the absence of current national standards, the challenge for the Board is to develop new standards in the rules that allow energy-efficient LED or other lighting to be used instead of high-pressure sodium, but not to allow use of LEDs that are less efficient than high-pressure sodium.

The proposed amendments provide that outdoor lighting must meet one of five alternative tests to be used in place of high-pressure sodium lighting. The first three tests are a simplification of the existing requirement in the rules. The current rules reference Table 26-14 in the Twelfth Edition of the Standard Handbook for Electrical Engineers. The Twelfth Edition handbook was published in 1987 and is no longer available for purchase. Table 26-14 lists the rated initial lumens for nine different high-pressure sodium bulbs. After deducting 10 percent from these values, an efficacy rating in lumens per watt can be calculated for each bulb. (As the bulb size increases, so does the number of lumens per watt.) After examining these values, the Board concluded that several lamps of similar size could be grouped together and assigned a single rating and, therefore, the proposed rules would have the same effect as the current rules. In other words, the mercury vapor and standard efficiency metal halide bulbs that do not meet the requirements of the current rules will not meet any of the first three tests in the proposed rules.

The intent of the fourth test is to ensure that the proposed rules will not produce results that are contrary to common sense. With the recent advances in lighting technology, it is impossible to quantify every

factor that will lead to a more energy-efficient lighting system. Without the fourth test, well-designed and highly efficient lighting systems may be wrongly excluded if they do not meet the first three tests. However, if instead of proposing the fourth test the Board simply lowered the requirements in the first three tests, the result would be that less efficient lighting that should not be allowed would be allowed.

The fifth test is specific to LED or solid-state luminaries. The 66 lumens-per-watt value was chosen to be representative of the efficacy of a luminary using a 70 watt high-pressure sodium lamp once ballast losses and some fixture losses are factored in. The intent of the test is to allow cities and utilities that choose not to design a lighting system for a specific installation to still use the most efficient LED luminaries.

The proposed amendments also recognize that a lumens-per-watt efficacy rating may no longer be a good indicator of every lighting system's energy efficiency. Efficacy ratings for outdoor LED lighting systems are measured differently than other lighting systems and should not be directly compared to the efficacy ratings of high-pressure sodium lamps which do not account for ballast losses or fixture losses. Other factors (such as color quality, lumen maintenance, light distribution, or glare) may also affect a lighting system's performance and ultimately its energy efficiency. Unfortunately, there are no nationally adopted standards that account for all of the potential factors that impact the efficiency of exterior flood lighting.

Pursuant to Iowa Code sections 17A.4(1)"a" and "b," any interested person may file a written statement of position pertaining to the proposed amendments. The statement must be filed on or before August 3, 2010. The statement should be filed electronically through the Board's Electronic Filing System (EFS). Instructions for making an electronic filing can be found on the EFS Web site at <http://efs.iowa.gov>. Any person who does not have access to the Internet may file comments on paper pursuant to 199 IAC 14.4(5). An original and ten copies of paper comments shall be filed. Both electronic and written filings shall comply with the format requirements in 199 IAC 2.2(2) and clearly state the author's name and address and make specific reference to this docket. All paper communications should be directed to the Executive Secretary, Utilities Board, 350 Maple Street, Des Moines, Iowa 50319-0069.

A public hearing to receive comments on the proposed amendments will be held at 10 a.m. on August 24, 2010, in the Board's hearing room at the address listed above. Persons with disabilities who require assistive services or devices to observe or participate should contact the Board at (515)281-5256 at least five days in advance of the scheduled date to request that appropriate arrangements be made.

The Board does not find it necessary to propose a separate waiver provision in this rule making. The Board's general waiver provision in 199 IAC 1.3(17A,474,476,78GA,HF2206) is applicable to these amendments.

These amendments are intended to implement Iowa Code sections 364.23, 476.1, 476.1A, 476.1B, and 476.62.

The following amendments are proposed.

ITEM 1. Rescind subrule 35.15(3) and adopt the following **new** subrule in lieu thereof:

**35.15(3) *Efficiency standards.*** Lighting other than high-pressure sodium has equivalent or better energy efficiency if one or more of the following can be established:

- a. For lamps less than 120 watts, the lumens-per-watt lamp rating is greater than 77.1, or
- b. For lamps between 120 and 500 watts, the lumens-per-watt lamp rating is greater than 96, or
- c. For lamps greater than 500 watts, the lumens-per-watt lamp rating is greater than 126, or
- d. The new lighting is replacing high-pressure sodium lighting and uses less energy per installation than the lighting it is replacing, or
- e. The new lighting consists of solid-state lighting (SSL) luminaries that have an efficacy rating equal to or greater than 66 lumens per watt according to a Department of Energy (DOE) Lighting Facts label, testing under the DOE Commercially Available LED Product Evaluation and Reporting Program (CALiPER), or any other test that follows Illuminating Engineering Society of North America LM-79-08 test procedures.

ITEM 2. Rescind subrule 36.8(3) and adopt the following **new** subrule in lieu thereof:

**36.8(3) *Efficiency standards.*** Lighting other than high-pressure sodium has equivalent or better energy efficiency if one or more of the following can be established:

- a.* For lamps less than 120 watts, the lumens-per-watt lamp rating is greater than 77.1, or
- b.* For lamps between 120 and 500 watts, the lumens-per-watt lamp rating is greater than 96, or
- c.* For lamps greater than 500 watts, the lumens-per-watt lamp rating is greater than 126, or
- d.* The new lighting is replacing high-pressure sodium lighting and uses less energy per installation than the lighting it is replacing, or
- e.* The new lighting consists of solid-state lighting (SSL) luminaries that have an efficacy rating equal to or greater than 66 lumens per watt according to a Department of Energy (DOE) Lighting Facts label, testing under the DOE Commercially Available LED Product Evaluation and Reporting Program (CALiPER), or any other test that follows Illuminating Engineering Society of North America LM-79-08 test procedures.